

REMARKS/ARGUMENTS

Claims 1-22 are present in this application.

Claims 2, 9 and 11 were rejected under 35 U.S.C. §112, first paragraph. This rejection is repeated from the previous Office Action. In the Request for Reconsideration filed February 12, 2007, Applicants addressed this rejection in response to the Office Action dated October 10, 2006. The remarks therein are hereby reasserted. The present Office Action fails to address these remarks, and Applicants submit that the claims satisfy the requirements of 35 U.S.C. §112 for the reasons previously discussed. If the Examiner disagrees, it is requested that an explanation be provided. Withdrawal of the rejection is requested.

Claims 1-22 were rejected under 35 U.S.C. §103(a) over U.S. Published Patent Application No. 2003/0173151 to Bodtke in view of U.S. Patent No. 6,543,578 to Merz (referred to "Mertz" in the Office Action) or U.S. Patent No. 5,390,104 to Fulton. This rejection is respectfully traversed.

The Office Action recognizes that the Bodtke publication lacks at least the step wherein pivoting of the tower boom relative to the vehicle base and telescoping of the tower boom are performed simultaneously and independently. In fact, Bodtke describes that an operator positions the platform 206 at a desired elevation "by controlling the angle and/or extension of one or both of the primary and secondary booms 201 and 202 relative to the chassis 204." See, e.g., paragraph [0019]. In the embodiment illustrated in Fig. 6 referenced in the Office Action, the method of controlling platform position is the same. In this context, not only does the Bodtke publication lack a teaching of the claimed simultaneous and independent pivoting and telescoping, but Bodtke also lacks any teaching of performing pivoting and telescoping such that a tower boom nose pin follows one of a plurality of predetermined paths depending on an angle

of the main boom. The concept behind the varying paths that are dependent on an angle of the main boom were discussed in detail in the February 12 response.

The Office Action contends that “[b]oth Mertz and Fulton teach tower booms that are controlled independently and simultaneously to pivot and telescope the booms.” The Merz and Fulton patents were also discussed in detail in the February 12 response. The comments made in the February 12 Request were not addressed in the Office Action and are hereby reasserted by reference. As discussed, neither Merz nor Fulton in fact discloses such simultaneous and independent pivoting of a tower boom relative to a vehicle base and telescoping of the tower boom. Additionally, neither reference discloses or suggests such pivoting and telescoping such that the tower boom nose pin follows one of a plurality of predetermined paths depending on an angle of the main boom. The Office Action does not reference any teaching in any of the applied references that teaches or discloses this subject matter. For at least the detailed reasons previously discussed, Applicants submit that at least this subject matter is lacking in the references of record, and Applicants respectfully submit that the rejection of independent claims 1, 6, 10, 19 and 22 is misplaced.

With regard to independent claim 3, the Office Action contends that it would have been obvious to modify the Bodtke publication “to enable the nose of his boom to follow a predetermined path that includes both a constant radius and a straight line.” Although Bodtke references the use of an independent reference frame 241, 641 represented by a horizontal line normal to the direction of gravitational force, none of Bodtke, Merz or Fulton even remotely discloses a nose pin predetermined path defined by (1) a constant radius equal to a fully retracted length of the tower boom for tower boom angles less than a predetermined angle relative to gravity, and (2) a substantially straight line tangent to the constant radius for tower boom angles

greater than the predetermined angle relative to gravity. That is, claim 3 specifically defines a nose pin path as a constant radius up to a predetermined tower angle, then a straight line tangent to the constant radius above the predetermined angle. In contrast, Bodtke describes that the operator basically has autonomous control over the position of the platform until the angle of inclination 244 reaches a predetermined angle. It is clear then that Bodtke lacks any such nose pin predetermined path including a constant radius below a predetermined boom angle relative to gravity.

Merz and Fulton do not correct this deficiency. Rather, the Merz patent relates primarily to a control device for effecting motion of an aerial work platform. Merz is not concerned with a nose pin predetermined path. As discussed previously, the Fulton patent discloses an “adaptive control man-augmentation system” that controls the movement of a suspended work station. This system is similarly unconcerned with controlling pivoting and telescoping of a tower boom such that a nose pin follows a predetermined path.

For at least these reasons, Applicants respectfully submit that the rejection of independent claim 3 is also misplaced.

With regard to the dependent claims, Applicants submit that these claims are allowable at least by virtue of their dependency on an allowable independent claim. Moreover, with regard to the single control switch defined in claims 2, 9 and 11, the Office Action contends that both Merz and Fulton disclose a single switch. As discussed previously, however, although Merz discloses the use of a single handle, the Merz device utilizes multiple switches to enable independent control. Although this point was raised in the response filed February 12, the Office Action does not address it. The “go button” switch 71 described in the Fulton patent is described as a “deadman” switch that presumably allows the controls to remain live while engaged. Such a

switch does not cause the machine to follow a predetermined path, and even assuming somehow it could be interpreted to follow a predetermined path, this path would not vary based on an angle of the main boom.

Still further, Applicants' previous comments with regard to claim 8 were also overlooked in the Office Action. As noted above, although the Bodtke publication utilizes a reference line relative to gravity, none of Bodtke, Merz or Fulton teaches or suggests the step of controlling an angle of the main boom relative to the tower boom by maintaining the boom angle relative to gravity as measured at (1) the commencement of a tower lift control or (2) the conclusion of a main boom lift command when the main boom is active with a tower lift command.

Reconsideration and withdrawal of the rejection are thus respectfully requested.

Claim 18 was rejected under 35 U.S.C. §103(a) over Bodtke in view of Merz or Fulton and U.S. Patent No. 5,446,980 to Rocke. Initially, Applicants submit that the Rocke patent does not correct the deficiencies noted above with regard to Bodtke, Merz and Fulton. As such, Applicants submit that claim 18 is allowable at least by virtue of its dependency on an allowable independent claim. Moreover, Applicants do not contend that the use of rotary sensors to measure rotary joint movement is novel. Rather, the system including the sensing means defined in claim 18 uses a rotary sensor between the main and tower booms and a gravitationally based sensor to measure the angle of the tower. This structure allows the angle of the main boom to be determined relative to gravity. Rocke does not include any such structure, and Applicants thus respectfully submit that the rejection is misplaced. Withdrawal of the rejection is requested.

Claims 19-21 were rejected under 35 U.S.C. §103(a) over Bodtke in view of Merz or Fulton and U.S. Patent No. 4,113,054 to Myers (referred to "Meyers" in the Office Action). The Myers patent, however, does not correct the deficiencies noted above with regard to Bodtke,

Merz and Fulton. None of the applied references provides any teaching or remote suggestion of a control system that effects pivoting of a tower boom relative to a vehicle base and telescoping of the tower boom simultaneously and independently such that the tower boom nose pin follows one of a plurality of predetermined paths depending on an angle of the main boom. Applicants thus submit that independent claim 19 and dependent claims 20 and 21 are allowable for reasons similar to those discussed above with regard to the rejection over Bodtke in view of Merz or Fulton. Moreover, claim 21 recites that the sensing means includes an inclinometer attached to the tower boom that measures an angle of the tower boom relative to gravity, and a rotation sensor coupled between the tower boom and the main boom that determines a relative position of the tower boom and the main boom. The control system determines the main boom angle relative to gravity based on output from the inclinometer and the rotation sensor. Although claim 21 is included in this rejection, this subject matter is not addressed. Applicants submit that for this reason also, the rejection of claim 21 is misplaced. Reconsideration and withdrawal of the rejection are respectfully requested.

In view of the foregoing remarks, Applicants respectfully submit that the claims are patentable over the art of record and that the application is in condition for allowance. Should the Examiner believe that anything further is desirable in order to place the application in condition for allowance, the Examiner is invited to contact Applicants' undersigned attorney at the telephone number listed below.

Prompt passage to issuance is earnestly solicited.

BEAN et al.
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Respectfully submitted,

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